

**Enclosure C**  
**IRON AND STEEL STAKEHOLDER MEETINGS**  
**Possible Revisions to 40 CFR Part 420**  
**Iron and Steel Effluent Limitations Guidelines**  
**WASHINGTON, D.C.**  
**DECEMBER 1 and 3, 1998**

This document summarizes the Iron and Steel stakeholder meetings held at the Department of Labor in Washington, D.C., December 1 and 3, 1998. The primary objectives of the meetings were to present the technology bases for EPA's preliminary options for possible revisions to 40 CFR Part 420 and to solicit comments, issues, and new ideas from interested stakeholders. Attendees at the meetings included representatives from many iron and steel manufacturing facilities, iron and steel trade associations, environmental groups, EPA's effluent limitations guidelines task force, EPA Office of Water, and EPA's contractors for this project. A list of attendees is included in Attachment A.

During these meetings, the Environmental Protection Agency (EPA or the Agency) presented process flow diagrams showing preliminary technology options and potential best management practices (BMPs) that may be incorporated into a revised Part 420 and/or included in National Pollutant Discharge Elimination System (NPDES) permit and pretreatment guidance. The presentations were organized by type of manufacturing process. A discussion period followed each presentation. EPA requested ideas from the stakeholders to identify useful incentives for greater pollution control. Although no formal record of the discussions was made, a summary of EPA's meeting notes and preliminary responses to comments is presented here. The summary is divided into the following four sections:

- General statements, issues, and concerns;
- Technical issues related to cokemaking, integrated steelmaking through hot forming, and carbon steel finishing, as discussed on December 1, 1998;
- Technical issues related to non-integrated steelmaking, carbon steel finishing, and specialty steel finishing, as discussed on December 3, 1998; and
- Cost and economic achievability issues.

At the meetings, EPA encouraged participants to supplement their oral statements with written comments and supporting data. In that regard, EPA provided a set of data-quality protocols for use when submitting data for this rulemaking effort. This handout, along with all other handouts and meeting summaries, will be posted on the EPA Iron and Steel web site in January or February 1999, at <http://www.epa.gov/OST/ironsteel/>. (The December 2, 1998 workshop discussions on completion of the iron and steel surveys are not included in this document.)

The statements, issues, and concerns summarized below were presented by members of the audience during the stakeholder meetings. EPA is currently performing data collection and is beginning to perform certain data analysis tasks. When possible, EPA responded to questions at the stakeholder meetings. In many instances, preliminary responses have been provided in this document to describe EPA's current thinking. For many of the issues raised, however, it is too early in the process for the Agency to provide responses that may represent its final position for purposes of developing proposed revisions to Part 420.

### **General Statements, Issues, and Concerns**

- 1) A discussion occurred regarding the issue of whether EPA can impose a business decision (i.e., recovery vs. nonrecovery cokemaking plants) on the industry. Additionally, driving industry to zero discharge on certain processes does not allow flexibility for industry changes or the impact of other regulations.

**Response:** EPA recognizes that promulgation of a regulation based on certain model process or wastewater treatment technologies can have the potential to restrict or severely limit industry options for compliance. Possible selection of zero discharge for New Source Performance Standards (NSPS) based on nonrecovery cokemaking technology is an example of this possibility. EPA intends to examine this issue where it arises in the context of providing regulatory flexibility within the framework of the statutory and regulatory processes it must follow in revising Part 420. However, there may be circumstances where EPA may promulgate effluent limitations guidelines and standards that can only be met by certain combinations of process and/or wastewater recycle and treatment technologies.

- 2) Some sites generate a significant amount of wastewater by pretreating noncontact cooling water and other water used on site. Examples include water softening waste and boiler blowdown. There are no credits for the permit writer to use to give allowances for intake water treatment.

**Response:** This is an issue with many categorical effluent limitations and standards that EPA intends to address in this rulemaking review, either by including supplemental effluent limitations guidelines and standards in a revised Part 420, or by developing supplemental NPDES permit and pretreatment guidance.

- 3) Miscellaneous process wastewater streams (e.g., equipment cleaning and washdown water, basement sumps, storm water) need to be addressed in the regulations such that permit writers have the flexibility to make allowances in the permit.

**Response:** See the response to comment 2.

- 4) Several participants believe that owners or operators of iron and steel facilities are required to install and operate the specific model process and wastewater treatment

technologies used by EPA to establish the technology basis for the effluent limitations guidelines and standards.

**Response:** The Clean Water Act does not mandate that any particular process or wastewater treatment technologies be used by owners or operators to achieve technology-based effluent limitations guidelines and standards. Thus, owners and operators are free to use any combination of process technologies and wastewater treatment technologies to meet applicable NPDES permit and pretreatment limitations based on Part 420; the specific types of treatment depicted in the diagrams would be used to estimate compliance costs. There are, of course, legal and practical limitations to this precept. An owner or operator cannot use a technology that would result in violations of other applicable laws or regulations; and, for certain effluent limitations guidelines and standards based, in part, on high-rate recycle of process waters, it may not be possible to achieve the applicable effluent limitations without recycle.

- 5) Concern was expressed about background concentrations of pollutants in intake water streams.

**Response:** In the prior rulemaking for the current Part 420, EPA did not find that concentrations of regulated pollutants in intake waters were significant in the context of developing the effluent limitations guidelines and standards, and in the context of complying with resulting NPDES permit effluent limitations. Provisions already exist to allow control authorities to adjust limitations and standards to reflect the presence of pollutants in the intake water. For direct discharges, see 40 CFR 122.45(g) (pollutants in intake water), and, for indirect discharges, see 40 CFR 403.15 (net/gross calculation). In this rulemaking, EPA will again review this issue and solicits relevant data early on in the rulemaking process.

- 6) Concern was raised about having proper allowances for storm water and how the iron and steel regulations will interface with the storm water regulations. Some sites have already redirected storm sewers into process wastewater systems. During periods of heavy rain, these sites have reached or exceeded daily maximum discharge limitations. Storm water-related practices should be left for the storm water permit program; to codify them in the effluent limitations guideline regulations would be duplicative. Similar sentiments were expressed regarding ground water remediation programs which are regulated under the Resource Conservation and Recovery Act (RCRA).

**Response:** EPA does not intend to duplicate existing storm water management requirements from other regulations in a revised Part 420; however, EPA recognizes that the current Part 420 does not provide for explicit storm water allowances for existing treatment systems at older steel mills that, by nature of the sewerage systems, collect and treat relatively large volumes of storm water. EPA solicits site-specific examples of this issue and relevant

design information (e.g., typical dry weather process wastewater flow, hydraulic design flow of treatment facilities, rainfall event that would result in overflow or bypass within the wastewater collection system).

- 7) Problems are generated by the production-based calculation when writing the permit. The calculation is based on the highest production month or highest production year, but the permit specifies limits in pounds per day. The production-based calculation used to develop the permit limitations is critical. Depending on the assumptions used to convert annual production to a daily production number, the resulting permit limitation can vary up to a factor of three.

**Response:** EPA intends to thoroughly review the production basis for the revised regulation to ensure a reasonable production basis is included in the regulation for both the NPDES permit and pretreatment programs.

- 8) Concern was raised about the importance of properly validating data quality collected by EPA or submitted by stakeholders.

**Response:** EPA has developed a set of data quality protocols to be used when submitting data for the Iron and Steel rulemaking effort. This handout, along with all other handouts and meeting summaries will be posted on the EPA Iron and Steel web site in January or February 1999, at <http://www.epa.gov/OST/ironsteel/>.

- 9) Measured concentrations of oil and grease can vary widely depending on whether the analytical method used is based on Freon extraction or hexane extraction. The extent of the variation depends on the wastewater characteristics. Historical data to be provided by industry are based on the Freon extraction method, but EPA sampling analysis is based on the hexane extraction method.

**Response:** The analytical data for oil and grease being collected by EPA for this rulemaking as part of its field sampling programs are based on the hexane extraction method. EPA recognizes this will likely be an issue in developing revised effluent limitations guidelines and standards, and is in the process of developing an approach to address this issue.

- 10) Concern was expressed that surveillance and corrective actions required at one site will be transferred unnecessarily to all other sites in the industry. Concern was also expressed about best management practices (BMPs) causing rigidity in the permit process rather than flexibility. Industry representatives suggested that BMPs be put into a permit writer's guidance document rather than codifying them in the regulation.

**Response:** EPA recognizes that BMPs or corrective actions included in consent orders or consent decrees for certain steel mills may not be appropriate for other mills. EPA will consider these and similar comments when deciding whether to codify BMPs in Part 420.

- 11) Industry representatives expressed the desire to keep the “water bubble” in the regulation, especially if the limits are going to be “ratcheted” down.

**Response:** EPA solicits additional comments and examples of possible water bubble applications and other regulatory flexibility mechanisms.

- 12) Will temperature be regulated?

**Response:** Historically, EPA has not regulated temperature in categorical effluent limitations guidelines and standards. At this writing, EPA does not intend to do so for Part 420.

- 13) What is the benefit to having filters as a treatment step following the clarifiers on all of the systems proposed in the options?

**Response:** Effluent polishing filters have been included as part of the wastewater treatment technology trains in many of the preliminary options to provide for maximum removal of suspended solids and toxic pollutants that may be in particulate form or adsorbed onto suspended solids. This approach represents good wastewater engineering practice and reflects treatment systems installed in the iron and steel industry. As noted in the response to comment 4, owners and operators are not required to install the model technologies used by EPA to establish the effluent limitations guidelines. EPA will evaluate the cost-effectiveness of each of the model technologies in the technology options as part of its review.

- 14) Will phenol be addressed in the regulation as an indicator or a true pollutant? For publicly owned treatment works (POTWs), removal credits are not applicable to indicator parameters, so EPA needs to make this issue clear.

**Response:** EPA intends to evaluate and address this issue as part of the rulemaking process.

- 15) One audience member suggested that sites may wish to work with their POTWs to document pollutants that are treated by the POTW as opposed to pollutants that pass through.

- 16) The concern was raised that it seems EPA is taking the best parts of various mills and combining them to develop the preliminary options, but no sites are actually performing the options as proposed.

**Response:** Each of the preliminary options presented by EPA on December 1 and 3, 1998 is or has been demonstrated in whole in the iron and steel industry. While the Clean Water Act provides EPA with latitude in establishing the technology bases for effluent limitations guidelines and standards, including the ability to transfer technologies from other industries, EPA generally

intends to base proposed revisions to Part 420 primarily on technologies demonstrated within the iron and steel industry. A more extensive review of technologies demonstrated elsewhere may be complicated by the expeditious court-ordered schedule for this project.

- 17) Will pollution prevention opportunities be incorporated into the revised regulations?

**Response:** Yes, there are many instances where specific process changes or recycle and reuse technologies are incorporated into EPA's technology bases for the existing regulation as well as possible revisions of the regulation.

- 18) Would EPA consider more expensive options that are more environmentally benign?

**Response:** EPA invites specific comments, suggestions, and new ideas for additional technology options as part of this rulemaking activity; however, because of the expeditious schedule for this project, EPA does not have time to evaluate options that involve technologies that are not well demonstrated on a reasonable scale.

**Technical Issues Related to Cokemaking, Integrated Steelmaking Through Hot Forming, and Carbon Steel Finishing (Discussed December 1, 1998)**

**Cokemaking (Figures 1 to 5)**

- 19) Reuse of scrubber blowdown from pushing emission controls may cause problems with total dissolved solids at the quench station, and may conflict with EPA air regulations.

**Response:** EPA is aware that use of coke plant wastewaters high in total dissolved solids (TDS) for coke quenching is precluded by many state implementation plans and federal consent orders and consent decrees. TDS limits in the range of 1,500 mg/l for quench waters are in effect for many coke plants. Based on data obtained during the prior rulemaking for Part 420, pushing emission control scrubber wastewaters were not found to be high in TDS as other coke plant wastewater streams (e.g., waste ammonia liquor). Although EPA does not believe that use of wastewaters from pushing emission control systems would conflict with air emission limitations, additional data on this issue are solicited.

- 20) Does EPA plan to change the cyanide limitations from total cyanide to free cyanide?

**Response:** EPA will consider free cyanide as a regulated pollutant for cokemaking operations.

- 21) EPA's process flow diagram for coke plant wastewater treatment did not show stripping of acid gases (e.g., HCN, H<sub>2</sub>S) from coke plant wastewaters ahead of addition of caustic for fixed ammonia stripping. This approach would generate higher untreated wastewater

cyanide concentrations than would a separate wastewater stripping system incorporating steam stripping prior to caustic addition.

**Response:** EPA recognizes this issue and has included a separate steam stripper ahead of caustic addition for fixed ammonia removal in its revised process flow diagrams.

- 22) Option A does not include dilution water; however, several industry representatives stated it is necessary for effective operation of their treatment system. Dilution water is added for temperature and toxicity control and to minimize problems associated with organics removal. Some industry representatives cautioned that systems that appear to operate without dilution may, in fact, have dilution water added in the form of other miscellaneous water needing treatment (cotreatment).

**Response:** EPA currently believes that many coke plant operators use excess dilution water in coke plant biological treatment systems for temperature control, toxicity control, and for other purposes. With properly designed cooling systems, there should be no need for dilution water for temperature control in all but extreme circumstances. There are a number of coke plant biological treatment systems that are operated with little or no dilution water for toxicity control. At some point in the rulemaking process, EPA may hold a technical working session with coke plant operators to thoroughly review current operating practices and discuss this issue.

- 23) There is no pH control shown in Option B. Is that assumed?

**Response:** Yes.

- 24) For the denitrification step in Option B, is EPA looking to remove nitrate?

**Response:** Yes, EPA is evaluating total nitrogen control as a possible best available technology economically achievable (BAT)/NSPS option.

- 25) Can EPA demonstrate that any of the Option B operations (nitrification/ denitrification) were running in 1993 through 1997? There is the concern that this may have been a viable option before the benzene National Emission Standards for Hazardous Air Pollutants (NESHAPs) were implemented; however, this is no longer the case. There is also the concern that the survey will not capture this information.

**Response:** A technology does not have to be demonstrated for any specific period of time to be considered as a model treatment technology. Nonetheless, EPA is aware of the site-specific issue cited by the commenter regarding the impact of coke oven NESHAPs on the operation of the coke plant biological treatment system. EPA will ensure that representative data for this operation will be considered in the rulemaking process.

- 26) Option B appears to focus on removal of phenols and ammonia. However, there does not seem to be a need for this option for indirect dischargers (i.e., pretreatment standards for existing sources (PSES)) since POTWs can effectively remove phenols and ammonia. In addition, POTWs have been reluctant to grant removal credit variances in the past.

**Response:** EPA will be evaluating whether to revise the pretreatment standards for phenol and ammonia to reflect whether they pass through POTWs, and solicits supplemental coke plant performance and POTW performance data for that purpose.

- 27) For Option C with chlorination, is EPA concerned about the generation of chlorinated organics?

**Response:** EPA is concerned that alkaline chlorination of biologically treated coke plant wastewaters could result in excessive discharges of trihalomethanes and other chlorinated by-products; however, available data do not show this to be the case. When considering this option, EPA will evaluate whether the additional removal of ammonia-N, cyanide, and phenolic compounds outweighs actual or potential discharge of chlorination by-products.

- 28) Option C is used as a central treatment system for treating coke plant and blast furnace wastewaters at one steel mill, possibly more. Is EPA looking at cotreatment options? Stand-alone coke producers may not need a polishing step. Sites may have installed pressure filters to treat blast furnace wastewaters rather than cokemaking wastewaters.

**Response:** EPA is considering regulatory options that would facilitate cotreatment of compatible wastewaters, including coke plant and blast furnace wastewaters. EPA is also considering options for coke plants with separate treatment systems as shown in Figures 1 to 5 of the materials distributed for the December 1 and 3 stakeholder meetings.

- 29) Options C and D are polishing steps. Is anyone taking a life-cycle approach to developing the options? Is EPA considering environmental non-water quality impacts? Implementing these options could generate a large amount of sludge while removing only a small amount of pollutants.

**Response:** EPA will be considering several environmental non-water quality impacts as part of its rulemaking review for each option considered. These will include energy consumption, possible impacts on air quality, and wastewater sludge generation and disposal.

- 30) Options C and D: what are the benefits of the filters on the end of the system?

**Response:** Effluent polishing filters have been included as part of the wastewater treatment technology train in many of the preliminary options to provide

for maximum removal of suspended solids and toxic pollutants that may be in particulate form or adsorbed onto suspended solids. This approach represents good wastewater engineering practice and reflects treatment systems installed in the iron and steel industry. EPA will evaluate the cost-effectiveness of each of the model technologies in the technology options as part of its review.

- 31) If EPA establishes a zero discharge NSPS for nonrecovery cokemaking, has the Agency considered the implications for storm water, ground water, and nonprocess water?

**Response:** EPA will consider possible storm water, ground water, and nonprocess wastewater issues in any option where nonrecovery cokemaking is the model process technology.

- 32) EPA appears to be limiting the industry if it requires greenfield cokemaking plants to install nonrecovery cokemaking operations. That may be the preferred option now, but what happens five years from now if a new cokemaking technology becomes available?

**Response:** The Agency is very interested in establishing requirements and incentives to obtain the potential environmental benefits associated with switching from recovery to nonrecovery cokemaking operations. However, the comment raises a point that merits further consideration.

- 33) Has EPA considered why some sites have installed tertiary treatment? Usually it is installed to achieve water quality limitations, which is not appropriate for the entire industry.

**Response:** The implication from this comment is that EPA should not consider in this rulemaking advances in in-process or wastewater treatment technologies that were made as a result of water quality-based effluent limitations since the current Part 420 was promulgated. EPA disagrees and believes it has the statutory authority and the statutory obligation to consider the state-of-the-art in wastewater treatment, regardless of the root cause of any particular advancement.

- 34) Would there continue to be an allowance for coke oven gas desulfurization processes that generate process wastewater?

**Response:** Yes.

- 35) If a site has advanced wastewater pretreatment before discharge to a POTW, would there be an exemption from applicable pretreatment standards?

**Response:** At present, EPA does not contemplate an exemption for sites that have wastewater pretreatment systems more advanced than the model pretreatment systems. Such sites should be able to maintain consistent

compliance with applicable PSES. EPA is considering whether and to what extent to provide incentives for facilities to install and operate advanced waste treatment.

- 36) Is there a net increase in sludge generation with any of these options?

**Response:** EPA expects there will be an increase in wastewater sludge generated with most of the coke plant options currently being considered.

- 37) Do the four technology options presented (Options A to D) meet the same effluent limitations as the current regulation? If not, does EPA have new or revised limitations in mind?

**Response:** EPA intends to develop separate effluent limitations guidelines and standards for each technology option it presents. The proposed effluent limitations and standards have not yet been developed.

#### **Sintering (Figure 6)**

- 38) Objections were made to EPA dictating a business decision by requiring a dry air pollution control system in Option C. Additionally, the Maximum Achievable Control Technology (MACT) standards currently under development may be driving sinter plants to wet systems, which conflicts with the effluent guidelines that EPA is proposing.

**Response:** This is a valid point that merits further consideration.

- 39) Most of industry cotreats sintering wastewater with blast furnace wastewater. Only one attendee said he treats sintering wastewater by itself.
- 40) The raw materials charged into the sinter plant affect the wastewater characteristics. A member of the public asked of industry representatives whether anyone has conducted studies to determine if a change in charge materials could affect the wastewater characteristics. According to the industry representatives who responded, the only thing they try to control is the oil content. If the material has iron or carbon, they generally use it.

#### **Ironmaking (Figure 7)**

- 41) The 100% evaporation of blowdown on slag for Option A may not be attainable during low production periods. Sites will have the same blowdown, but not the same amount of slag. Additionally, during wet seasons, wastewater flows can exceed the capacities of the slag pits. The concern about transporting wastewater to remote slag pits was also raised. Industry representatives did confirm that evaporation of "some" slag pit water is viable.

**Response:** These are valid points that merit further consideration.

- 42) Is EPA going outside the scope of the Clean Water Act by proposing the lining of slag pits to avoid ground water contamination? EPA has other programs to address ground water contamination should it occur or exist.

**Response:** EPA is aware that a number of blast furnace operators have experienced ground water contamination resulting from blast furnace slag cooling with blast furnace process wastewaters. Although there are other regulatory programs that address ground water contamination, EPA intends to address the potential for ground water contamination as a non-water quality environmental impact as part of this rulemaking effort. EPA is considering whether to prohibit blast furnace slag quenching with process wastewaters unless there is a positive demonstration that the slag quenching system is secure.

- 43) Option B is viable for the removal of solids and metals. Options C and D are difficult to implement for the removal of ammonia. Alkaline chlorination is costly and difficult to operate. Are the ammonia levels high enough to warrant this type of technology? Would it not be more appropriate to leave the ammonia issue to local water quality limitations to be applied where it is needed?

**Response:** Alkaline chlorination was part of the selected model BAT and NSPS option from the current Part 420. The technology is well demonstrated and is again being considered for this rulemaking.

- 44) EPA needs to make sure Clean Water Act Section 301(g) variances are available for phenols and ammonia.

**Response:** EPA will consider the availability of Section 301(g) variances for ammonia and phenols (4AAP) when selecting model BAT/NSPS technologies.

- 45) Options B through D include the addition of lime, which increases TDS concentrations and will cause problems with bioassay testing for water quality standards.

**Response:** Although high TDS concentrations can contribute to effluent toxicity, the use of lime for metals precipitation and alkalinity control is not expected to affect effluent toxicity to the extent posed by the commenter.

#### **Basic Oxygen Furnace (BOF) Steelmaking (Figures 8 to 10)**

- 46) Industry does not want pH as a technology-based limit at internal outfalls, BOF wastewater usually is discharged to a cooling pond. EPA should make the point of compliance for pH at the final point of discharge for a facility.

**Response:** EPA will consider whether and how to regulate pH in the revised regulation for all process operations. For example, a maximum limit of 9.5

might be appropriate where metals precipitation requires an optimum pH in the 8.7 to 9.2 range.

- 47) The comment was made that adding carbon dioxide before the clarifier in Option B would have an acidic effect, affecting the chemistry of the system. It could also interfere with polymer performance. There are few dissolved metals present in these streams, so lime addition is not needed. If lime addition is not needed, the inclined plate separators are not needed; the filters would remove the particulate metal. If softening is needed, a side stream softener should be used.

**Response:** The amount of carbon dioxide added in BOF-suppressed combustion scrubber water recirculation systems is not sufficient to depress the pH to the point suggested by the commenter. Carbon dioxide is added in relatively small quantities to promote a softening reaction in the BOF clarifiers to minimize the potential for fouling and scaling. This is typically done on a full scale basis rather than on a side stream as suggested. Because of the high pH in BOF systems, not all zinc is present in the particulate state; thus some form of pH control is needed to precipitate zinc, which could be removed in a clarifier, inclined plate separator, or filter.

- 48) One site reported needing to add acid before the filters to lower the pH back into the 8.5-to-9 range so zinc is insoluble.

**Response:** See the response to comment 47.

#### **Vacuum Degassing (Figure 11)**

- 49) Inclined plate separators are not appropriate to use in operations such as ironmaking, steelmaking, casting, and hot forming. The inclined plate separators are not effective for metal hydroxide sludges. Clarifiers are more effective.

**Response:** EPA showed inclined plate separators in many process flow diagrams for removal of precipitated metals in low-volume recycle system blowdown streams. This is common practice at many steel mills. EPA agrees that conventional clarifiers are suitable solids removal devices and may be superior to inclined plate separators for certain applications. As noted in the response to comment 4, owners and operators are free to use any technology to achieve compliance; the specific types of treatment depicted in the diagrams would be used to estimate compliance costs.

- 50) Vacuum degassing waters are often cascaded back to the BOF, so there is no need to use filters on the end of the treatment system. Additionally, few sites, if any, treat vacuum degasser wastewater by itself.

**Response:** EPA agrees that where treated or partially treated process waters are cascaded from one treatment system to another, there is no need for intermediate filtration unless there was an internal NPDES monitoring point to assess compliance with pollutants not limited in the receiving treatment system.

EPA disagrees with the second statement. Vacuum degassing process wastewaters are almost universally treated separately for solids removal and temperature control. The blowdowns from these systems are often cascaded or cotreated with wastewaters from other steelmaking processes.

### **Continuous Casting (Figure 12)**

- 51) Most casting water has mill scale, which only requires a physical treatment system. If only a negligible amount of dissolved metal is present in the wastewater, why is chemical precipitation needed?

**Response:** EPA agrees with this comment. A metals precipitation system was shown as one option to account for possible cotreatment with blowdowns from vacuum degassing and steelmaking process wastewaters.

- 52) One site has no clarifiers after the scale pits; the water goes right to the filters.

**Response:** As noted in the response to comment 4, owners and operators are free to use any combination of technologies to achieve compliance. Several continuous casters are operated as described by the commenter. EPA included a roughing clarifier in the model treatment system for supplemental solids removal and as a place to collect oil that escaped the scale pit. This was done to protect the filter media from fouling with oil. Alternatively, systems with large scale pits, effective maintenance of caster lubrication systems, and effective oil removal in the scale pits may not need a clarifier as shown in the model treatment system.

### **Hot Forming (Figure 13)**

- 53) Some sites indicated that they primarily roll carbon steel; however, they may also roll specialty steel, which may affect the water chemistry.

**Response:** EPA will consider how to address this issue in the revised regulation.

- 54) Selling or giving away mill scale is dependent upon the market and how oily the scale is.

**Response:** The revised Part 420 will not mandate any particular disposal method for mill scale. For purposes of estimating economic impacts, EPA will consider a mix of likely mill scale disposal options.

- 55) Concern was expressed that requiring BMPs to monitor oil sheens would remove flexibility. One industry representative stated that this type of BMP is now a permanent condition in their permit, although they feel the BMP is no longer necessary. Either BMPs should not be included in the regulations, but rather in permit guidance for best professional judgment (BPJ), or have a kick-in applicability statement for sites that meet certain criteria (e.g., repeated violations).

**Response:** See the response to comment 10.

### **Carbon Steel Finishing (Figure 15)**

- 56) Generally, sites keep chromium wastewaters separate from the other finishing streams because the generated wastewater treatment sludge is hazardous. It costs one site \$250 per ton to haul the hazardous waste.

**Response:** EPA agrees that it makes sense to segregate sludges that may be hazardous for separate disposal. The model treatment systems will reflect this practice.

- 57) Industry representatives warned EPA to be careful about the terminology for acid recovery and acid regeneration. There are other uses for acid elsewhere in the plant, or they could sell or give acids to POTWs to use as flocculent aids. For example, acids are used for breaking emulsions in cold rolling mills, and spent pickle liquor could be used for coprecipitation before the clarifiers.

**Response:** EPA appreciates these comments. Acid recovery for sulfuric acids and acid regeneration for hydrochloric acids will be considered as part of the regulatory options; however, EPA intends to provide flexibility in the regulation for disposal and beneficial reuse of spent pickling acids.

- 58) Continuous annealing is not addressed in the finishing options. It typically has an alkaline cleaning step at the beginning of the line.

**Response:** EPA agrees and will include continuous annealing in the regulation, possibly as a subdivision of a surface cleaning subcategory.

- 59) Attendees discussed the existing Metal Finishing regulation and the rulemaking effort for the Metal Products and Machinery industry, including how the steelmaking operations would interact with these other rules.

- 60) Treating electrogalvanizing wastewater at an integrated mill which has other wastewaters to cotreat is different than at a stand-alone finishing mill.

**Response:** EPA will consider this comment when developing the proposed effluent limitations guidelines and standards applicable to cotreated and stand-alone steel electrocoating operations.

- 61) A request was made that EPA consider the wastewater characteristics of leaded steel producers.

**Response:** EPA will consider wastewaters from leaded steel operations.

**Technical Issues Related to Non-integrated Steelmaking, Carbon Steel Finishing, and Specialty Steel Finishing (Discussed December 3, 1998)**

**Non-integrated Steelmaking (Figure 14)**

- 62) In Option A, does the 3% blowdown refer to the difference between intake and discharge, or does it refer to 3% blowdown from the total recycle in the mill?

**Response:** The model treatment system includes a 3% blowdown from the total rate of recycled water in the mill. For example, a blowdown of 300 gallons per minute (gpm) would be discharged from a mill with a total process water recirculating rate of 10,000 gpm.

- 63) Option B should specify a flocculation step before wastewater is sent to an inclined plate separator. A reaction clarifier may be needed before the separator.

**Response:** See the responses to comments 4 and 49 about the use of inclined plate separators vs. clarifiers.

- 64) Option B's demonstration status can be explained by looking at the evolution of the non-integrated mills. Some sites did not put in systems with large enough equipment so they had to add polishing steps on the end.

- 65) One mill is an older large mill that underwent several modifications over time. Option C (zero discharge) would be inappropriate for them because their blowdown is transported a mile away from the processes for treatment. The logistics of moving water where zero discharge opportunities exist can be inordinately costly. Another site commented that Option C (zero discharge) is not always viable. For instance, they recycle 95% of their treated effluent, but they still blow down 1,500 gpm, which they could not dispose as suggested in Option C. Not everyone has the same opportunities for evaporative consumption of water (e.g., off-site slag processing contractor, remote slag cooling, minimal need for electrode cooling).

**Response:** EPA appreciates these comments and solicits detailed information regarding the practicality and cost of retrofitting zero discharge to older non-integrated mills.

- 66) If an option is based in part on the evaporation of process wastewater (e.g., Option C), then the Agency needs to factor in commercial arrangements between steelmakers and on-site slag processing contractors.

**Response:** EPA appreciates this comment. There appears to be no standard practice for handling wastewaters from on-site slag processors at steel mill sites. EPA believes that few contractors have separate NPDES permits. In any event, the responsibility to address this issue will reside with the owner or operator of the steel mill site holding the NPDES permit.

- 67) Does EPA have a particular filter media in mind for pressure filters?

**Response:** See the response to comment 4 regarding the use of technologies. EPA will not specify a particular filter media as part of this regulation.

- 68) A concern was raised about gradual scale accumulation in pipes due to high TDS in high-rate recycle systems. This situation may not be a maintenance problem in newer mills yet, but it could eventually become a problem that requires blowdown where sites incur a regular operating and maintenance (O&M) expense. Concern was expressed about hidden costs, especially at older mills where ancillary noncontact cooling water systems may be needed.

**Response:** This is a valid comment that merits further consideration. EPA solicits additional comments and information regarding this issue.

- 69) There are cases where the rolling mill may operate separately from the caster (i.e., each has a separate recycle system), or where rolling operations exist without casting. Is the regulation going to address this? EPA should not just combine these two operations without some other option. A recommendation was made to stay with the building block approach rather than combining operations.

**Response:** EPA intends to propose a modified Part 420 that will provide for maximum flexibility for NPDES permitting.

- 70) Do any of the options remove metals from blowdown?

**Response:** Option B would remove metals from the blowdown.

- 71) An attendee felt that BMPs are too rigid, and that EPA should let sites meet the regulations any way they can.

**Response:** As noted in the response to comment 10, EPA is considering whether to include some BMPs in the regulation or to include all BMPs in NPDES permit and pretreatment guidance.

- 72) What affect will the inclusion of BMPs have on the compliance schedule?

**Response:** For direct dischargers, the Clean Water Act does not provide for compliance schedules to meet technology-based effluent limitations guidelines beyond the statutory deadlines, all of which have passed. Consequently, NPDES permits must be written to require immediate compliance; if permit holders need additional time to comply with the limits, they would need to obtain administrative orders from their respective permitting agencies that will contain an enforceable compliance schedule outside the NPDES permit.

For BMPs, EPA would likely consider including a reasonable compliance schedule in the regulation. For an example of how EPA codified BMPs for a subcategory (including compliance schedules) see 40 CFR 430.3 (Pulp, Paper and Paperboard Manufacturing Point Source Category).

- 73) If EPA develops incentives such that more stringent limitations are traded for longer compliance schedules, one attendee wants it written into the incentives that the new technology will not become BAT if EPA decides to revisit this industry again.

**Response:** EPA cannot agree to limit its possible future reviews of categorical effluent limitations guidelines beyond statutory factors.

- 74) Storm water management should be left to the permit writer's best judgment, not included in the regulation. If it is included, how will it interface with multi-sector storm water permits and existing plans?

**Response:** See the response to comment 6 regarding storm water.

- 75) When considering the management of storm water from slag processing, or storm water that contacts mill scale and electric furnace dust, EPA needs to estimate the cost of its disposal. Additionally, sites want an allowance for storm water.

**Response:** See the response to comment 6 regarding storm water. EPA will review storm water management for areas subject to contamination with slag, mill scale, and electric furnace dust.

- 76) The comment was offered that pH limits are issues in geographic areas of the country (e.g., Utah) where natural runoff already has a pH greater than 9. If treatment of storm water is required in the regulation, sites may have to treat water with a high pH due to no fault of their own.

**Response:** See the response to comment 6 regarding storm water. It is unlikely that EPA will include pH limits in the regulation for storm water dischargers, but may do so for runoff from slag processing areas.

- 77) In some areas of the country, water rights are an issue. Some sites are required to return certain volumes of water to the receiving streams.

**Response:** Issues such as this are probably best addressed on a site-specific basis by the local permit authority. EPA will evaluate regulatory flexibility mechanisms to allow permit modifications to effluent limitations guidelines and standards.

### **Steel Finishing (Figures 15 and 16)**

- 78) For wire drawing mills that produce small volumes of wastewater (e.g., 100,000 tons/year), installing an acid regeneration facility is not a feasible option.

**Response:** EPA agrees with this comment. See the response to comment 57 regarding acid recovery and acid regeneration.

- 79) An issue was raised concerning recycling fume scrubber water if caustic is added to control acid emissions. The pH of the scrubber water is generally too high to directly recycle/cascade into acid pickling as makeup water. The scrubber water could be treated first and the effluent could be recycled as makeup water to the fume scrubber.

**Response:** EPA agrees that it may not be practical to recycle or reuse all fume scrubber blowdowns for acid tank makeup, and that other applications may be available for recycling the wastewater.

- 80) Wastewater from galvanizing lines typically has a low pH (<2). By adding lime, sites would generate large amounts of solids. Many sites regenerate their solutions and remove the solids then.

**Response:** The EPA model treatment systems will generally reflect good wastewater management practice within the industry.

- 81) Carbamates used as treatment chemicals are expensive and difficult to settle out. They are good for low-volume waste streams.

- 82) Will the limitations account for net/gross allowances for intake water pollutants?

**Response:** See the response comment 5 regarding intake water pollutants.

- 83) Both indirect heating and steam sparging of acid pickling baths are used in the industry. One site explained how a few years ago they installed indirect heating in a sulfuric acid recovery system. They recently went back to direct steam sparging because the heat exchangers were more difficult to maintain. The steam sparging does not seem to hinder the acid recovery system.

- 84) If a zero discharge option is selected, will sites still be allowed to discharge noncontact cooling water?

**Response:** Yes. Any zero discharge options would apply to process wastewater.

### **Cost and Economic Achievability Issues (Discussed December 1 and 3, 1998)**

- 85) How will EPA normalize the compliance costs across the industry? There is a concern about collecting data from a period of high profitability in the industry that may not be representative of the current economic conditions.

**Response:** EPA will model the financial performance of the industry over recent periods of high profitability and also under low profitability conditions to assess economic achievability over a range of economic environments.

- 86) What does Financial and Economic Information (Part B of the survey) have to do with effluent guidelines?

**Response:** Section 301(b)(2) of the Clean Water Act requires EPA to select the best available technology economically achievable when promulgating regulations for existing, direct discharging point sources. The information solicited in this portion of the survey is relevant to EPA's determinations concerning the economic achievability of the various technology options being considered as BAT and, by extension, the technology basis for pretreatment standards.

- 87) The industry in 1998 looks very different than 1995-1997. Is EPA going to address this in the economic analysis?

**Response:** Yes. EPA is looking into how to do that. The Agency developed forecasting models for other cyclical industries. See also the response to comment 85.

- 88) Is EPA going to look at the effects of increased imports during 1998?

**Response:** Yes. EPA will analyze trade case data and evaluate how to incorporate the sharp industry downturn seen in 1998 in the forecasting methods.

- 89) The industry is going to incur costs for air regulations, such as PM<sub>2.5</sub> (NESHAP for particulate matter 2.5 microns and larger), coke battery MACT, steel pickling MACT, and others. Is EPA going to take into account the effects of other upcoming regulations?

**Response:** Yes. EPA is looking into how to do that.

- 90) Will EPA evaluate the effectiveness of pollutant removals from various components in a treatment train, or among options?

**Response:** Yes. EPA will evaluate incremental cost-effectiveness to the extent deemed reasonable from a technology perspective.

- 91) Will EPA conduct a life-cycle costing of the options? What if an option causes mills to generate more sludge that will have to be sent to a landfill?

**Response:** EPA includes costs such as additional landfilling costs when evaluating pollution control options. EPA also considers non-water quality environmental impacts, such as increased energy use and air emissions, when evaluating these options.

- 92) BMPs, if required, may mean high expenditures to capture a few pounds of pollutants.

**Response:** EPA intends to evaluate the relative costs and removals of BMPs when evaluating options.

- 93) Why not let economics determine who does what level of water recycling?

**Response:** The concept advocated by this comment is beyond EPA's statutory authority and would not be practical to implement. Economic achievability is an important aspect of proposing and promulgating effluent limitations guidelines and standards; however, within the framework of economic achievability, there would be major differences among owners and operators regarding the capability for installation of wastewater recycle treatment systems. It was the intent of Congress that the effluent limitations program establish uniform, minimum standards of performance, (i.e., a level playing field). This could not be done if individual facility or company financial performance were used to establish the level of treatment required at each site.

## **Attachment A**

**Iron & Steel Stakeholder Meeting - December 1, 1998**

<b>Name</b>	<b>Affiliation</b>
Elwood Forsht	U.S. EPA - EAD
Sheila Frace	U.S. EPA - EAD
George Jett	U.S. EPA - EAD
Carol Ann Siciliano	U.S. EPA - OGC
Kevin Tingley	U.S. EPA - EAD
William Sonntag	U.S. EPA - Office of Reinvention
David C. Ailor	American Coke and Coal Chemicals Institute
H.C. Ames	US Steel/Kobe Steel
Guy Aydtlett	HRSD/AMSA
Barbara Bachman	Bethlehem Steel
Chuck Blumenschein	Chester Engineers
Lois Epstein	Environmental Defense Fund
Allen Gilliam	Arkansas Department of Pollution Control & Ecology
Stewart T. Herman	Bethlehem Steel Corporation
Bob Johnston	ISPAT/Inland
Mark L. Kamholz	Tonawanda Coke Corporation
Dean Kawamoto	Senate Environment Committee
Gerald Kendrick	Jewell Coal and Coke Company
R. Wade Kohlmann	Citizens Gas & Coke
Jessica Landman	Natural Resources Defense Council
Danny Lewis	Empire Coke Company
Jim May	Widener Law
H. Ron McCollum	US Steel
Margie Nellor	Los Angeles County Sanitation Department
Ronald D. Neufeld	University of Pittsburgh
Neil Parke	Eli Lilly & Co.

**Iron & Steel Stakeholder Meeting - 01 December 1998 (Continued)**

<b>Name</b>	<b>Affiliation</b>
Don Perander	AK Steel
Mike Peters	SMI-Texas
Richard Healy	US EPA - OW
J.P. Richardson	Jewell Coal and Coke Company
Fran Robertaccio	Dupont
Glenn M. Shaul	US EPA - ORD
K.C. Shaw	Geneva Steel
Tom Shepker	WCI Steel
Bruce Steiner	American Iron and Steel Institute
Lori Sundstrom	City of Phoenix
Larry Szuhay	LTV Steel
Vincent Torres	UT Austin
David Trimble	Textile Rental Services Association
Jim Volanski	US Steel
Tom Waligure	Wheeling-Pittsburgh Steel
Gary Amendola	Amendola Engineering
Deborah Bartram	Eastern Research Group
Jennifer Conner	Eastern Research Group
Maureen Kaplan	Eastern Research Group
Brian King	Eastern Research Group

**Iron & Steel Stakeholder Meeting - December 3, 1998**

<b>Name</b>	<b>Affiliation</b>
Elwood Forsht	U.S. EPA - EAD
Sheila Frace	U.S. EPA - EAD
George Jett	U.S. EPA - EAD
Carol Ann Siciliano	U.S. EPA - OGC
Kevin Tingley	U.S. EPA - EAD
Harry J. Alexander	Business Environment Inc.
Jeff Boyle	Newport Steel
Deborah L. Calderezzo	Allegheny Ludlum
Dan Collins	American Wire Producers Association
Neil Dalton	Roanoke Electric Steel
Don DeLapa	American Wire Producers Association
Joe Donato	American Wire Producers Association
Judd Ebersviller	North Star Steel
Alan Gillespie	SMI-Birmingham
Charles Grizzle	The Grizzle Company
Art Hall	Wheatland Tube Inc.
Paul Hamilton	Southwest Galvanizing
Richard Harche	American Wire Producers Association
Dave Hemmelgarn	Worthington Industries
Dick Hoyt	Washington Steel
Valerie Hudson	Gallatin Steel
Dick Johannes	Legget and Platt
John Kabo	ITT Industries
Brad Koltak	American Wire Producers Association
John Launius	SMI-Texas
Robert W. Lee	SMI-Texas

**Iron & Steel Stakeholder Meeting - 03 December 1998 (Continued)**

<b>Name</b>	<b>Affiliation</b>
Jeff Longworth	Collier Shannon
Steve Mauterstock	Southwest Galvanizing
John Moschgat	Georgetown Steel
Dominic Nardis	The Timken Company
Gary Nied	J & L Specialty Steel
Mike Peters	SMI-Texas
Harvey Pierman	American Spring Wire
Darrell Shier	SMI-South Carolina
Hans Sidell	American Wire Producers Association
Mike Stokes	Electroalloy
David Sula	Nucor Steel
Bill Taylor	Valmont
Steve Thurman	Oregon Steel Mills
Wayne Turney	Nucor Steel
Jack VanKirk	CSC, Ltd.
Mark Vignovic	Weirton Steel
Leonard Wisniewski	Republic
D.E. Woodbury	American Wire Producers Association
Gary Amendola	Amendola Engineering
Deborah Bartram	Eastern Research Group
Jennifer Conner	Eastern Research Group
Maureen Kaplan	Eastern Research Group
Brian King	Eastern Research Group

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